

CLAIMS

1. A phosphorescent phosphor comprising a compound expressed by SrAl_2O_4 as a matrix, europium (Eu) doped to said matrix as an activator, and dysprosium (Dy) doped to said matrix as a co-activator;

an amount of said doped europium (Eu) being more than 1.5% and not more than 5% in terms of mol% relative to a total mole number of strontium (Sr), europium (Eu) and dysprosium (Dy);

an amount of said doped dysprosium (Dy) ranging $0.4 \leq \text{Dy}/\text{Eu} \leq 2$ in terms of a molar ratio relative to europium (Eu); and

a ratio of aluminum (Al) ranging from 2.02 to 2.4 in terms of a molar ratio relative to a total mole number of strontium (Sr), europium (Eu) and dysprosium (Dy).

2. A method of manufacturing an alkaline-earth metal aluminate phosphorescent phosphor, wherein:

an aluminum (Al) compound, a strontium (Sr) compound, a europium (Eu) compound and a dysprosium (Dy) compound are mixed so that molar ratios of the elements meet following requirements:

$$0.015 < \text{Eu}/(\text{Sr} + \text{Eu} + \text{Dy}) \leq 0.05,$$

$$0.4 \leq \text{Dy}/\text{Eu} \leq 2,$$

$$2.02 \leq \text{Al}/(\text{Sr} + \text{Eu} + \text{Dy}) \leq 2.4; \text{ and}$$

a resultant mixture is fired in a reductive atmosphere, and then cooled and ground.

3. The method of manufacturing an alkaline-earth metal aluminate phosphorescent phosphor according to claim 2, wherein a boron compound as flux is added to a raw material; and the resultant mixture is fired.